

Application No. 09/675,076
Supplemental Amendment dated November 19, 2004
Reply to Office Action of July 18, 2002

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application.

Listing of Claims:

Claim 1. (currently amended). A method for preparing a composite non-woven fabric comprising the steps of:

- a) providing a first non-woven hydroentangled substrate web layer containing moisture and having predominantly staple length fibers, and a lesser weight percentage of a first binder fiber component, said first binder fibers having a desired melting temperature range;
- b) depositing a substantially dry second non-woven layer on said first layer to form an unbonded composite, said second layer predominantly having a high bulk, high loft pulp fiber component and a lesser weight percentage of a second binder fiber component, said second binder fibers having a desired melting temperature range substantially equal to said first binder fiber component melting temperature; and
- c) thermally bonding with a heated gaseous medium said unbonded composite, said gaseous medium heated to a temperature in the range of said first and second binder fiber melting temperature; said first and second binder fiber components at least partially melting and flowing into an interface region between said first and second layers; and cooling said layers; said layers thereby being stabilized and bonded

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together without increasing the density of either layer, while removing moisture from said first layer; and

d) further comprising the step of providing a third layer, said third layer comprised of hydroentangled staple fibers having a third fiber binder component having a melting temperature substantially equal to said first and second binder fibers, said second layer sandwiched between said first and third layers to form said unbonded composite, said unbonded composite being thermally bonded by heated air at a temperature in the range of said binder fiber melting point.

Claim 2 (original). A method as in claim 1, wherein said first layer comprises hydroentangled staple fibers.

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u/11/04 Claim 3 (previously amended). A method as in claim 1, wherein said first layer comprises 60-85% rayon staple length fibers, and 40-15% of a bicomponent binder fiber.

Claim 4 (original). A method as in claim 3, wherein said bicomponent binder fiber comprises an outer layer of polyethylene and an inner layer chosen from the group consisting of poly(ethylene terephthalate) and polypropylene; and wherein said bicomponent fiber is 30-70 mm in length, and 1.7-6 dtex.

Claim 5 (original). A method as in claim 1, wherein said second layer comprises a mixture of 60-85% by weight pulp and 15-40% by weight of said second bicomponent binder fibers, and wherein said second bicomponent binder fiber comprises an outer

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layer of polyethylene and an inner layer chosen from the group consisting of poly(ethylene terephthalate) and polypropylene; and wherein said bicomponent fiber is 30-70 mm in length, and 1.7-6 dtex.

Claim 6 (original). A method as in claim 5, wherein said binder fiber has a length of 40-60 mm, and is about 2.2 dtex.

Claim 7 (original). A method as in claim 5, wherein said pulp comprises Southern Kraft.

Claim 8 (canceled).

Claim 9 (canceled).

Claim 10 (original). A method as in claim 1, wherein said second layer comprises substantially dry tissue.

Claim 11 (canceled).

Claim 12 (original). A method as in claim 1, wherein said first and second layers each having a basis weight between about 10-100 gm/m².

Claim 13 (original). A method as in claim 1, wherein said first and second layers each having a basis weight between about 20-70 gm/m².

Claim 14 (canceled).

Claim 15 (canceled).

Claim 16 (canceled).

Claim 17 (canceled).

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Claim 18 (canceled).

Claim 19 (canceled).

Claim 20 (canceled).

Claim 21 (canceled).

Claim 22 (canceled).

Claim 23 (canceled).

Claim 24 (canceled).

Claim 25 (canceled).

Claim 26 (canceled).

Claim 27 (canceled).

Claim 28 (currently amended). A method of making a high loft non-woven fabric comprising the steps of:

- a) hydroentangling a first web, comprised of a binder fiber component;
- b) depositing a substantially dry air laid pulp layer on said hydroentangled web while said hydroentangled web is substantially wet to form an unbonded composite; said pulp layer having a binder fiber component; and
- c) simultaneously drying said hydroentangled web and bonding said unbonded composite by exposing said unbonded composite to heated air, said heated air at least partially melting said binder fiber, said binder fibers at least partially flowing across a pulp layer and web interface and thereby bonding said layer and said web

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together,

further comprising the step of providing a third layer, said third layer comprised of hydroentangled staple fibers having a binder fiber component having a melting temperature equal to said previously-recited binder fiber components, said pulp layer being sandwiched between said first web and said pulp layer to form said unbonded composite, said unbonded composite being thermally bonded by heated air at a temperature in the range of said binder fiber melting point.

Claim 29 (previously presented). A method for preparing a composite non-woven fabric comprising the steps of:

- a) providing a first, non-woven hydroentangled substrate web layer having a first binder fiber component, said first binder fibers having a desired melting temperature range;
- b) depositing a second non-woven layer on said first layer to form an unbonded composite, said second layer having a high bulk, high loft fiber component and a second binder fiber component, said second binder fibers having a desired melting temperature range substantially equal to said first binder fiber component melting temperature;
- c) thermally bonding with a heated gaseous medium said unbonded composite, said gaseous medium heated to a temperature in the range of said first and second binder fiber melting temperature; said first and second binder fiber components

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at least partially melting and flowing into an interface region between said first and second layers; and cooling said layers; said layers thereby stabilized and bonded together without increasing the density of either layer; and

d) further comprising the step of providing a third layer, said third layer comprised of hydroentangled staple fibers having a third fiber binder component having a melting temperature substantially equal to said first and second binder fibers, said second layer sandwiched between said first and third layers to form said unbonded composite, said unbonded composite being thermally bonded by heated air at a temperature in the range of said binder fiber melting point.